## AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

## LISTING OF CLAIMS:

Claims 1-38 (Canceled)

39. (Previously Presented) A process for the preparation of a low-viscosity (poly)isocyanate composition comprising at least one isocyanate dimer containing a uretidinedione unit, from starting isocyanate monomers in which the isocyanate groups are borne by $sp^3$ carbon atoms, comprising the step of heating a starting reaction medium comprising said isocyanate monomers, in the absence of a dimerization catalyst, to a temperature of at least 50°C and of not more than 200°C for a period of not more than 24 hours.

40. (Previously Presented) A process according to Claim 39, wherein said starting reaction medium is heated to a temperature of at least 80°C, and of not more than 170°C.

41. (Previously Presented) A process according to Claim 39, wherein said starting reaction medium is heated to a temperature of at least 120°C.

42. (Previously Presented) A process according to Claim 39, wherein said reaction medium is heated along a decreasing temperature gradient.

43. (Previously Presented) A process according to Claim 39, wherein the heating time is at least 5 minutes, and not more than 24 hours.

44. (Previously Presented) A process according to Claim 39, wherein the heating time is at least 30 minutes, and not more than 5 hours.

45. (Previously Presented) A process according to Claim 39, wherein at the end of the dimerization reaction, the starting monomer is removed.

46. (Previously Presented) A process according to Claim 39, wherein at the end of the dimerization reaction, the starting monomer is removed by distillation.

47. (Previously Presented) A process according to Claim 39 for the continuous preparation of a composition containing at least one isocyanate dimer containing a uretidinedione unit, wherein after the dimerization reaction, the unreacted monomers are removed and are recycled into the dimerization step.

Claims 48-51 (Canceled)

52. (Currently Amended) A process for the preparation of a low-viscosity polyfunctional isocyanate composition comprising at least one isocyanate dimer containing a uretidinedione unit and at least one other compound having a function derived from the isocyanate function, from starting isocyanate monomers in which the isocyanate groups are borne by $sp^3$ carbon atoms and another compound

comprising at least one function other than isocyanate, which is reactive with the isocyanate function, this process comprising the following steps:

i) heating the starting reaction medium, in the absence of dimerization catalyst, to a temperature of greater than at least 80°C, and ~~less~~ not more than ~~at least~~ 200°C, for a period of less than 24 hours;

ii) reacting together the reaction product from step i) containing unreacted isocyanate monomers and a compound comprising at least one function other than the isocyanate function, which is reactive with the isocyanate function, optionally in the presence of a catalyst;

iii) removing from the reaction product from step ii) the isocyanate monomers and, optionally, the compound comprising at least one function other than the isocyanate function, which is reactive with the isocyanate function; and

iv) isolating the polyfunctional isocyanate composition of low-viscosity comprising at least one isocyanate dimer containing a uretidinedione unit and at least one other function derived from the isocyanate function.

53. (Previously Presented) A process for the preparation of a low-viscosity polyisocyanate composition comprising at least one isocyanate dimer containing a uretidinedione unit and at least one other compound containing a function derived from the isocyanate function, starting with isocyanate monomers in which the isocyanate groups are borne by $sp^3$ carbon atoms and with another compound comprising at least one function other than isocyanate, which is reactive with the isocyanate function, this process comprising the following steps:

(i) reacting an isocyanate monomer with a compound comprising at least one function other than an isocyanate function, which is reactive with the isocyanate function, optionally in the presence of a catalyst;

ii) heating the reaction mixture from step i) containing unreacted isocyanate monomers, in the absence of dimerization catalyst, to a temperature of greater than at least 80°C, and not more than 200°C, for a period of less than 24 hours;

iii) removing from the reaction product from step ii) the monomers and, optionally, the compound comprising at least one function other than the isocyanate function, which is reactive with the isocyanate function; and

iv) isolating the low-viscosity polyisocyanate composition.

54. (Previously Presented) A process for the preparation of a low-viscosity polyfunctional isocyanate composition comprising at least one isocyanate dimer containing a uretidinedione unit and at least one other compound having a function derived from the isocyanate function, from starting isocyanate monomers in which the isocyanate groups are borne by sp$^3$ carbon atoms and another compound comprising at least one function other than isocyanate, which is reactive with the isocyanate function, this process comprising the following steps:

i) reacting an isocyanate monomer with a compound comprising at least one function other than an isocyanate function, which is reactive with the isocyanate function, optionally in the presence of a catalyst;

ii) heating the reaction mixture from step i) containing unreacted isocyanate monomers, in the absence of dimerization catalyst, to a temperature of greater than at least 120°C, and not more than 170°C, for a period of less than 5 hours;

iii)    removing from the reaction product from step ii) the monomers and, optionally, the compound comprising at least one function other than the isocyanate function, which is reactive with the isocyanate function; and

iv)    isolating the low-viscosity polyisocyanate composition.


Claim 55 (Canceled)


56. (Previously Presented) A process according to Claim 52, wherein said function derived from the isocyanate function is a carbamate, allophanate, urea, biuret and/or blocked isocyanate function.


57. (Previously Presented) A process according to Claim 52, for the preparation of a low-viscosity polyfunctional isocyanate composition comprising at least one uretidinedione isocyanate dimer, and at least one compound having a biuret function, comprising the reaction, in step ii), of isocyanate monomers with water.
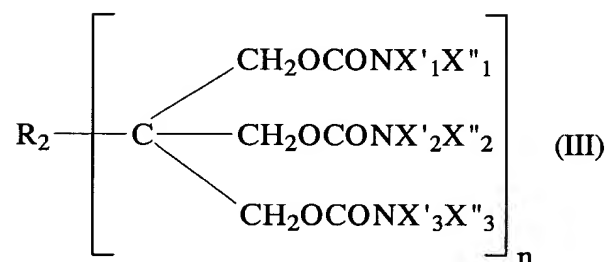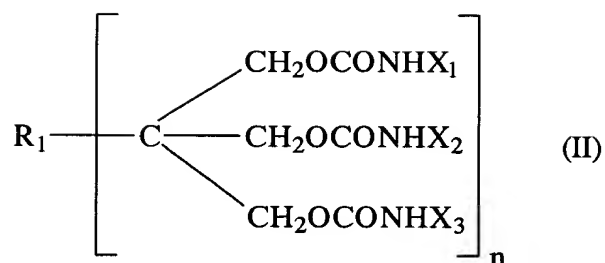

58. (Previously Presented) A process according to Claim 53 for the preparation of a low-viscosity polyfunctional isocyanate composition comprising at least one uretidinedione isocyanate dimer, and at least one compound having a biuret function, comprising the reaction, in step i), of isocyanate monomers with water.

59. (Previously Presented) A process for the preparation of a low-viscosity (poly)isocyanate composition comprising at least one isocyanate dimer containing a uretidinedione unit, from starting isocyanate monomers in which the isocyanate groups are borne by $sp^3$ carbon atoms, comprising the step of heating a starting reaction medium comprising said isocyanate monomers, in the absence of a dimerization catalyst, to a temperature of at least 50°C and of not more than 200°C for a period of not more than 24 hours, the reaction medium containing the starting monomers also containing a compound of general formula I:

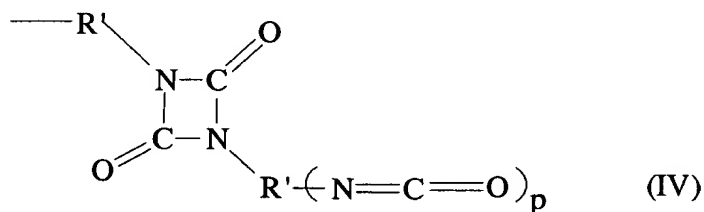$$R\left[C-(CH_2OH)_3\right]_n \qquad (I)$$
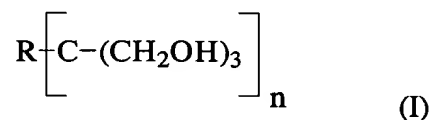
in which R is a mono- or n-valent hydrocarbon group having from 1 to 30 carbon atoms, in which the hydrocarbon chain optionally is interrupted by one or more chalcogen atoms and optionally, bears 1 to 3 OH groups, and n is an integer ranging from 1 to 3, said composition optionally containing products derived from reaction of said compound of formula I with a compound bearing an aliphatic isocyanate function.

60. (Previously Presented) A process according to claim 59, comprising adding to the reaction medium containing the starting monomers a compound of general formula II and/or III below:
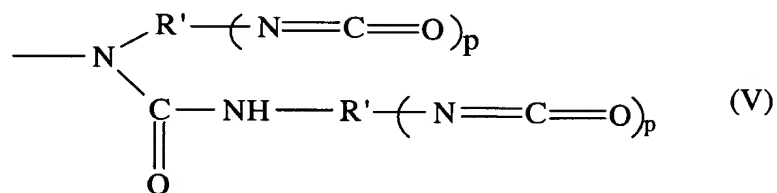
$$R_1 \left[ C \begin{array}{l} CH_2OCONHX_1 \\ CH_2OCONHX_2 \\ CH_2OCONHX_3 \end{array} \right]_n \quad (II)$$

$$R_2 \left[ C \begin{array}{l} CH_2OCONX'_1X''_1 \\ CH_2OCONX'_2X''_2 \\ CH_2OCONX'_3X''_3 \end{array} \right]_n \quad (III)$$

in which one or more of $X_1$, $X_2$ and $X_3$ represents a group $R'-(N{=}C{=}O)p$ in which $R'$ is an aliphatic group and p is an integer ranging from 0 to 5, the others representing, a group of formula

$$\begin{array}{c} \text{---}R' \\ \diagdown \\ N\text{---}C{=}O \\ | \quad | \\ O{=}C\text{---}N \\ \diagdown \\ R'\text{-}(N{=}C{=}O)_p \end{array} \quad (IV)$$
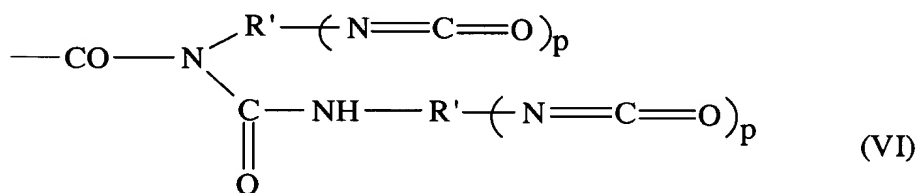
$R_1$ is a hydrocarbon group having 1 to 30 carbon atoms, in which the hydrocarbon chain optionally is interrupted by one or more chalcogen atoms and optionally, bears 1 to 3 OH groups, with the OH groups optionally substituted, with a group $CONX_1H$,

$X_1$ being as defined above, at least one of $NX'_1X''_1$, $NX'_2X''_2$ and $NX'_3X''_3$ represents the group,

$$\text{---}N\begin{cases} R'\text{---}(N{=}C{=}O)_p \\ \underset{\overset{\|}{O}}{C}\text{---}NH\text{---}R'\text{---}(N{=}C{=}O)_p \end{cases} \quad \text{(V)}$$

the others representing a group $NX_1H$ or $NX_1$-silyl and $R_2$ being a hydrocarbon group having 1 to 30 carbon atoms, in which the hydrocarbon chain optionally is interrupted by one or more chalcogen atoms and optionally, bears 1 to 3 OH groups, with the OH groups optionally substituted, with a group $CONX_1H$, or

$$\text{---}CO\text{---}N\begin{cases} R'\text{---}(N{=}C{=}O)_p \\ \underset{\overset{\|}{O}}{C}\text{---}NH\text{---}R'\text{---}(N{=}C{=}O)_p \end{cases} \quad \text{(VI)}$$

and n is an integer ranging from 1 to 3.


61. (Previously Presented) A process according to Claim 59, wherein R is a $C_1$-$C_4$ alkyl group substituted with 1 to 3 OH groups.


62. (Previously Presented) A process according to Claim 60, wherein said compound of general formula I is selected from pentaerythritol or trimethylolpropane,

and the compounds of general formulae II and III are selected from the

corresponding pentaerythritol or trimethlolpropane derivatives of general formula II or

III or both II and III wherein $R_1$ or $R_2$ or both $R_1$ and $R_2$ represents a group selected

from $CH_2OH$ or $CH_3CH_2$.


63. (Previously Presented) A process according to Claim 39, wherein said

starting isocyanate monomers are diisocyanates selected from the group consisting

of hexamethylene diisocyanate, tetramethylene diisocyanate, norbornane

dimethylene diisocyanate, isophorone diisocyanate,

bis(isocyanato)cyclohexylmethane and 2-methylpentamethylene diisocyanate.


Claims 64 and 65 (Canceled)


66. (Currently Amended)  A composition comprising at least one compound of

general formula X:

$$(O{=}C{=}N)_{\overline{p}} - R' - N \underset{C}{\overset{C}{\diamond}} N - R' -(N{=}C{=}O)_p \qquad (X)$$
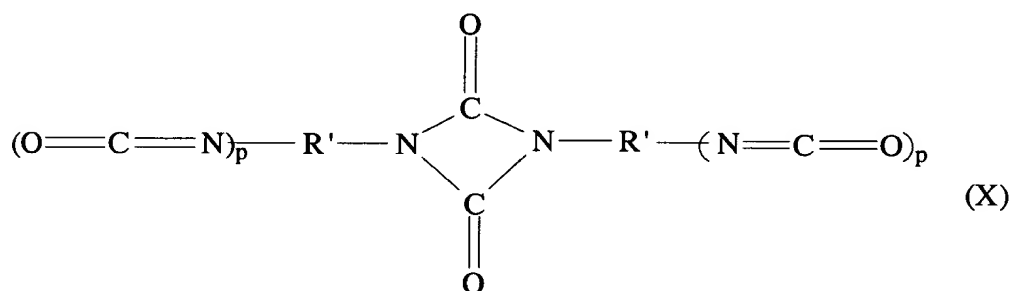
in which R' is an aliphatic group and p is an integer ranging from 0 to 5, and at least

one compound of general formula II:

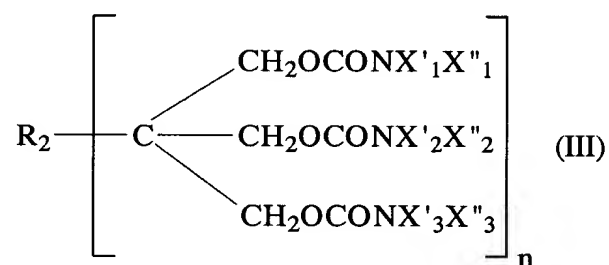$$R_1 \left[ C \begin{array}{l} CH_2OCONHX_1 \\ CH_2OCONHX_2 \\ CH_2OCONHX_3 \end{array} \right]_n$$
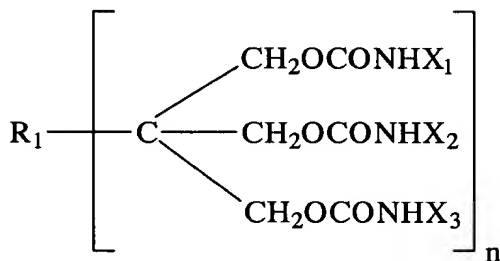
in which one or more of $X_1$, $X_2$ and $X_3$ represents a group $-R'(-N=C=O)_p$ and the

others represent, a group
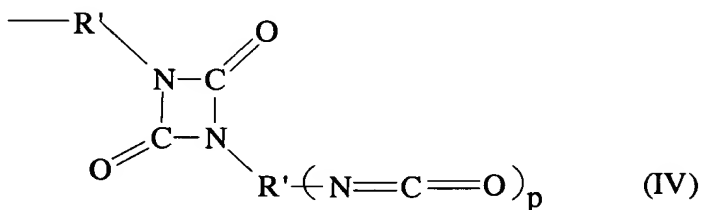
$$-R' \begin{array}{c} N-C \\ | \quad | \\ C-N \end{array} \begin{array}{c} O \\ \\ O \end{array} R'(N=C=O)_p \qquad \text{(IV)}$$

and $R_1$ is a hydrocarbon group having 1 to 30 carbon atoms, in which the

hydrocarbon chain optionally is interrupted by one or more chalcogen atoms and

optionally bears 1 to 3 OH group, with the OH groups optionally substituted with a

group $CONX_1H$ wherein $X_1$ represents $R'(-N=C=O)_p$

and n is an integer from 1 to 3;

and/or at least one compound of general formula III:

$$R_2 + C \left\langle \begin{array}{l} CH_2OCONX'_1X''_1 \\ CH_2OCONX'_2X''_2 \\ CH_2OCONX'_3X''_3 \end{array} \right]_n \quad (III)$$

in which at least one of $NX'_1X''_1$, $NX'_2X''_2$ and $NX'_3X''_3$ represents the group,

$$—N \left\langle \begin{array}{l} R'—(N=C=O)_p \\ \underset{\parallel}{C}—NH—R'—(N=C=O)_p \\ O \end{array} \right. \quad (V)$$

the others representing a group $NX_1H$ and

$R_2$ being a hydrocarbon group having 1 to 30 carbon atoms, in which the

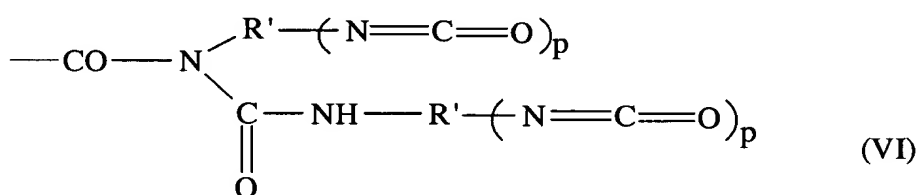hydrocarbon chain optionally is interrupted by one or more chalcogen atoms and

optionally, bears 1 to 3 OH groups, with the OH groups optionally substituted with a

group $CONX_1H$ or

$$-CO-N\begin{array}{l} R'-(N{=}C{=}O)_p \\ \overset{\displaystyle C}{\underset{\displaystyle O}{\parallel}}-NH-R'-(N{=}C{=}O)_p \end{array}$$
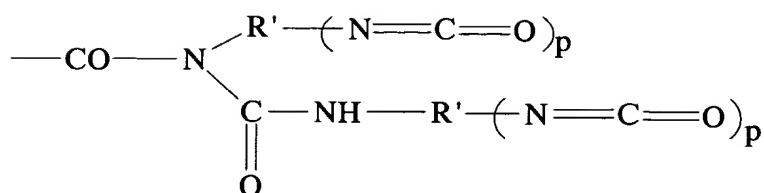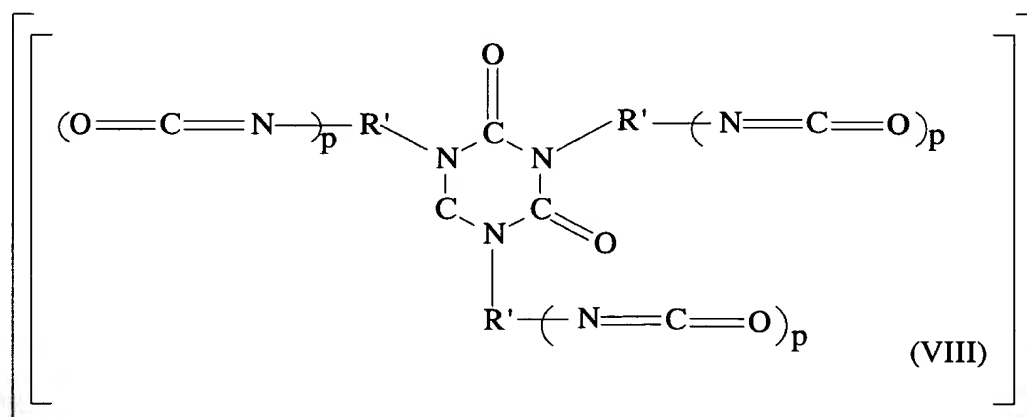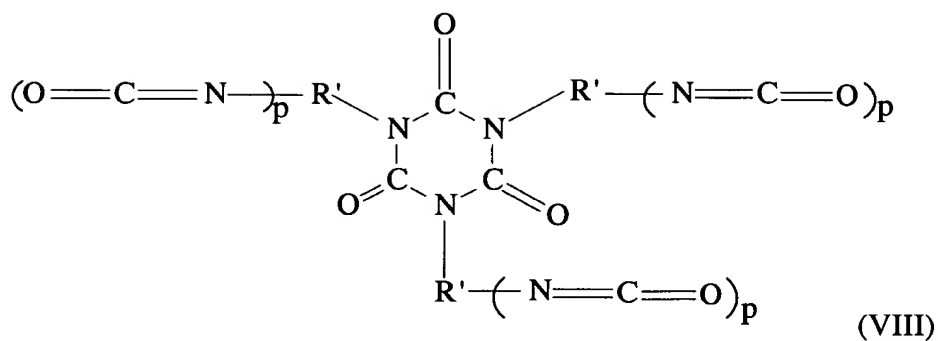
and/or and optionally a biuret compound obtained from a compound containing an isocyanate group of general formula VI

$$-CO-N\begin{array}{l} R'-(N{=}C{=}O)_p \\ \overset{\displaystyle C}{\underset{\displaystyle O}{\parallel}}-NH-R'-(N{=}C{=}O)_p \end{array} \qquad \text{(VI)}$$
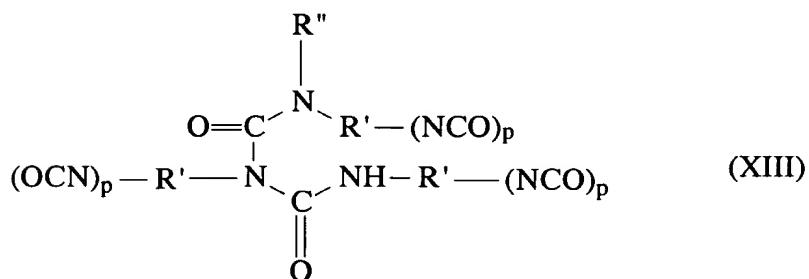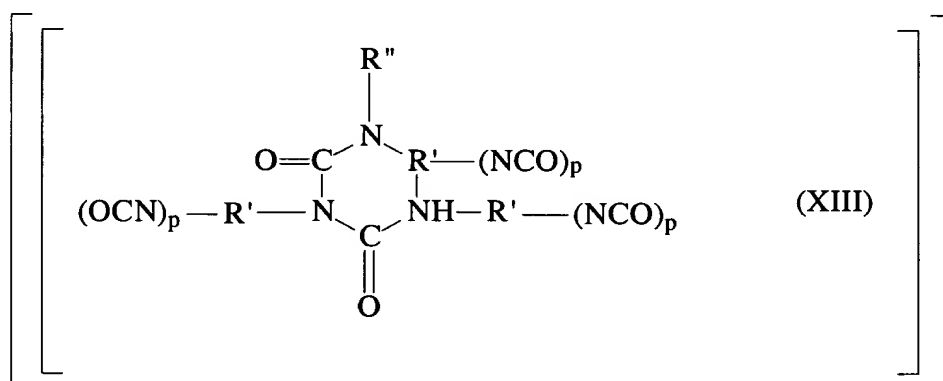
said composition further being free of dimerization catalyst selected from phosphine, aminopyridine, phosphoramide, organometallic or tertiary amine.

67. (Currently Amended) A composition according to Claim 66, further comprising a compound of general formula VIII:



(VIII)

$$\left( O\!=\!C\!=\!N\!\right)_{\!p}\!R'\!\underset{\displaystyle \underset{O=C}{\overset{\displaystyle \overset{\textstyle O}{\parallel}}{\underset{\displaystyle N}{\overset{\displaystyle C}{}}} }{}\cdots\ R'\!\left(\!N\!=\!C\!=\!O\right)_{\!p}$$

(VIII)
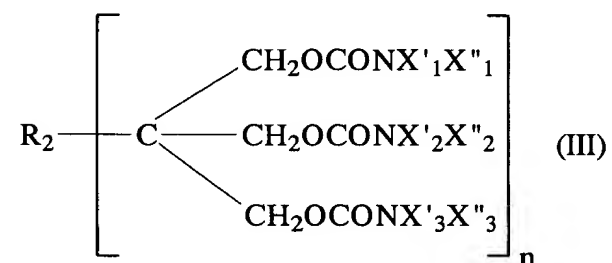
and/or a compound of general formula XIII:

$$(XIII)$$

wherein R" represents H or a hydrocarbon group.

68. (Currently Amended)  A composition ~~according to Claim 67~~ comprising at least one compound of general formula X ~~and optionally~~, at least one compound of general formula VIII ~~or~~ and at least one compound of general formula XIII, ~~or~~
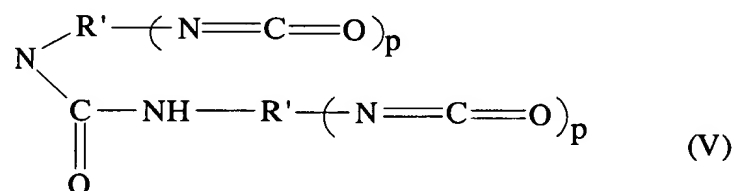
~~mixtures of compounds of formulae VIII and XIII~~, said composition being free of dimerization catalysts.


69. (Previously Presented)  A compound of general formula III
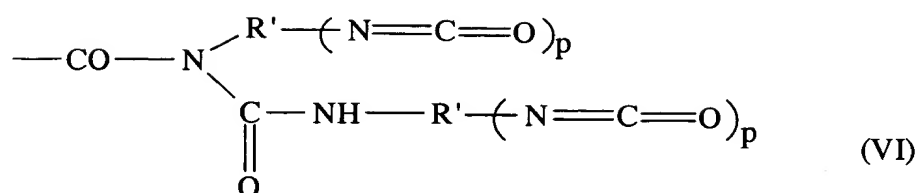
$$R_2 \left[ C \begin{matrix} CH_2OCONX'_1X''_1 \\ CH_2OCONX'_2X''_2 \\ CH_2OCONX'_3X''_3 \end{matrix} \right]_n \quad (III)$$

in which

at least one of $NX'_1X''_1$, $NX'_2X''_2$ and $NX'_3X''_3$ represents the group

$$N \begin{matrix} R'-(N{=}C{=}O)_p \\ \underset{\displaystyle O}{\overset{\displaystyle \|}{C}}-NH-R'-(N{=}C{=}O)_p \end{matrix} \quad (V)$$
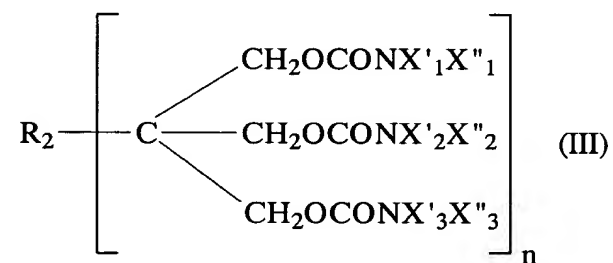
in which R' is an aliphatic group and p is an integer ranging from 0 to 5, the others representing a group $NX_1H$ with $X_1$ representing a group $R'\text{-}(N{=}C{=}O)_p$ and $R_2$ being a hydrocarbon group having 1 to 30 carbon atoms in which the hydrocarbon chain optionally is interrupted by one or more chalcogen atoms and optionally bears 1 to 3 OH groups, with the OH groups optionally substituted with a group $CONX_1H$, or

$$-CO-N \Big\langle \begin{array}{l} R'-(N{=}C{=}O)_p \\[2em] \underset{\displaystyle O}{\overset{\displaystyle \parallel}{C}}-NH-R'-(N{=}C{=}O)_p \end{array} \qquad (VI)$$

and

n is an integer ranging from 1 to 3.


70. (Previously Presented) A compound of the formula III

$$R_2 - \left[ C \Big\langle \begin{array}{l} CH_2OCONX'_1X''_1 \\ CH_2OCONX'_2X''_2 \\ CH_2OCONX'_3X''_3 \end{array} \right]_n \qquad (III)$$

in which:

the groups $NX'_1X''_1$, $NX'_2X''_2$ and $NX'_3X''_3$ are selected from a group of general

formula $NX_1H$, with $X_1$ representing a group $R'-(N{=}C{=}O)_p$ in which R' is an aliphatic

group and p is an integer from 0 to 5, or a group of general formula V,

$$N \underset{\underset{O}{\parallel}}{\overset{R'-(N=C=O)_p}{\underset{C}{|}}} -NH-R'-(N=C=O)_p \qquad (V)$$
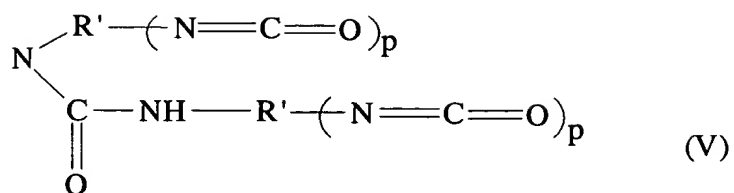
or a uretidinedione group of formula IV,

$$\overset{-R'}{\underset{O=C-N}{\underset{|}{N-C}}}\overset{O}{\underset{R'-(N=C=O)_p}{}} \qquad (IV)$$
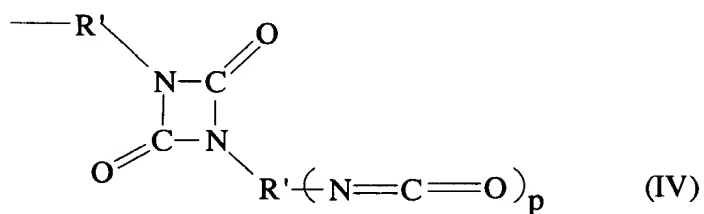
or an isocyanurate group of formula XI:

$$\overset{O}{\underset{O=C\underset{|}{\overset{N}{\underset{R'-(N=C=O)_p}{}}}C=O}{\overset{C}{\underset{N}{\overset{R'}{\underset{|}{}}}}}}\overset{R'-(N=C=O)_p}{\underset{}{}} \qquad (XI)$$
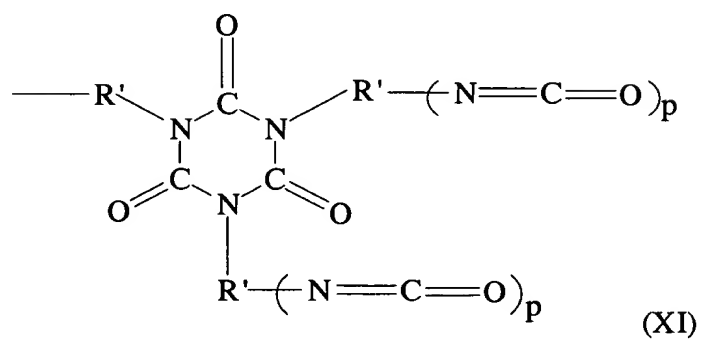
or, a biuret group of formula XII:

$$(OCN)_p - R' - N \underset{\underset{O}{\overset{\|}{C}}}{\overset{O=C \overset{R''}{\underset{|}{N}} R'-}{}} NH - R' - (NCO)_p \qquad (XII)$$
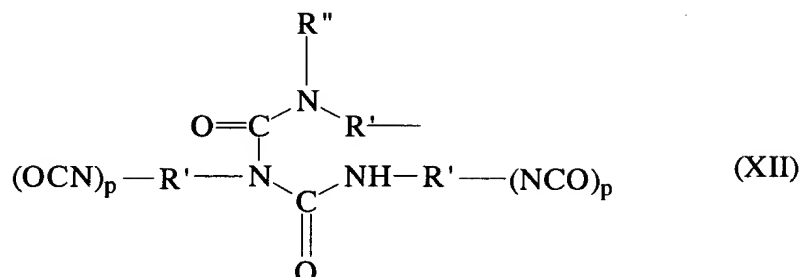
wherein R" represents H or a hydrocarbon group, $R_2$ being a hydrocarbon group

having 1 to 30 carbon atoms in which the hydrocarbon chain optionally is interrupted

by one or more chalcogen atoms and optionally bears 1 to 3 OH groups and n is an

integer ranging from 1 to 3, wherein the optional OH groups in $R_2$ are optionally

substituted with a group selected from $CONHX_1$, a group of formula VI, a group of

formula IV, a group of formula XI or a group of formula XII, with the proviso that the

compounds containing at least one group of formula $NX_1H$, or $CONX_1H$ or group of

formula V, also contain at least one group selected from a group of formula IV, group

of formula XI, or group of formula XII.


71. (Previously Presented) A compound according to Claim 69, in which p is

equal to 1 and containing 1, 2, 3 or 4 allophanate groups.


72. (Previously Presented)  A compound according to Claim 69, wherein R' is

an alkylene group ranging from 2 to 8 carbon atoms, optionally substituted with a

hydrocarbon chain optionally bearing an isocyanate function, a norbornylmethylene group, a cyclohexylmethylene group or a 3,3,5-trimethylcyclohexyl methylene group.

73. (Previously Presented)  A composition comprising:

- at least one composition according to Claim 66; and

- a polyol.

74. (Previously Presented)  A composition comprising:

- at least one composition according to Claim 66; and

- an acrylate polyol which satisfies the following conditions for a dry extract:

- Mw (weight-average molecular weight) not greater than 10,000;- Mn (number-average molecular weight) of not greater than 5000;

- Mw/Mn (dispersity ratio) of not greater than 5;

- number of OHs/molecule of greater than or equal to 2.

75. (Previously Presented)  A composition comprising:

- at least one composition according to Claim 66; and

- a polyester polyol having a viscosity of not greater than 10,000 mPa.s at 25°C, and an Mw of between 250 and 8000.

76. (Previously Presented) A composition according to Claim 73, containing a crosslinking catalyst, which is optionally a latent catalyst.